

$d$

$$S(\kappa, \lambda)_4$$

$$\begin{aligned} & \forall i \left( \text{Prob}_{OM} \left[ \begin{array}{c} \Delta \\ \hat{A}_i \end{array} \right] \right. \\ & \quad \left. = \text{Prob}_e \left( A_i^{-1}(\Delta) \right) \right) \text{ for } i \\ & \Rightarrow \langle \hat{A}_i \rangle_{OM} = \langle A_i \rangle_{e, i} \end{aligned}$$

$$\forall i \quad \langle \hat{A}_i \rangle_{OM} = \langle A_i \rangle_{e, i}$$

$$(u/A)(v/H(u))$$

$$H(u) \rightarrow u/A$$

$$H(u, v) \rightarrow$$

$$\langle \hat{S} \rangle_{OM} = \langle S \rangle_e$$

First Theorem says  $\exists \lambda = \lambda_0$   
for which we get determinable  
hidden variable theory.

But  $\lambda_0 \rightarrow F$

always with  $\lambda$  as the set  
of hidden variables.

June 8

WILL

Dear Michael,

I hope you are not upset with me for my comments or referee on your paper with Peter. I tried to be as positive as detailed as I could, so as to help turn it into the fine paper it should be.

I was at Notre Dame a few weeks ago to give a physics colloquium and was delighted to meet Tim Cushing.

I'm afraid I will miss you this fall at the PSA. I have a Guggenheim for the year and will be off in the Pacific Northwest (somewhere) writing. I hope to emerge by spring, and then to spend some time abroad. My daughter, Sharon, will in fact be doing a year's study at UC, London, so I have it as a "must" to spend some weeks there. I hope Chelsea will still be there by then, and that I can come by.

Best regards,

Guthrie

*W. V. Quine*  
22/6/82

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Dear Arthur,

I was very pleased to see your paper in Phys. Rev. Lett. It is nice to see physicists taking an interest in these problems. I still feel I want to claim that the following three statements are quite consistent

- 1.) Bell inequality  $\Rightarrow$  Kolmogorov joints for non-commuting observables. (your result)
- 2.) Every Kolmogorov probability space that is not too 'large' has a relative frequency (net) model
- 3.) The Bell inequalities can be derived without assuming the existence of well-defined limiting frequencies for the

'Von Neuman' joints of non-commuting  
observables.

(this was the claim I made  
in my ESR paper)

The reason that these 3 statements  
can all be simultaneously true  
is that the self model guaranteed  
by 2.) does not have to be  
the limiting frequency associated with  
a particular repeatable set-up in the real world.

The same point is made essentially  
by Von Froassen in his very lucid  
discussion of self models of probability  
spaces in his new book The Seen & the  
Image (especially top of p. 187).

I very much enjoyed our chat last  
term and enclose a 'clean' version  
of the nonlocality paper, which is now  
submitted to Foundations of Physics.  
With best wishes  
Yours  
Michael